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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/597,507	02/05/2007	Luquan Ren	016687-9009-US00	2147

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EXAMINER	
CASTELLANO, STEPHEN J	
ART UNIT	PAPER NUMBER
3781	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/597,507	REN ET AL.	
	Examiner	Art Unit	
	/Stephen J. Castellano/	3781	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 April 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-6* is/are pending in the application.

4a) Of the above claim(s) *3,5 and 6* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11-13-6*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim 2 has been canceled. Claims 1 and 3-6 are pending.

Applicant states that claims 2 and 4 read on the elected species of Group I, Sub-Grouping A. However, claim 2 has been canceled. It is believed that applicant intended to state that claims 1 and 4 read on the elected specie.

Applicant's election with traverse of claims 1 and 4 in the reply filed on April 7, 2010 is acknowledged. The traversal is on the ground(s) that election was not in compliance with PCT Rule 13. Specifically, there is a technical relationship involving one or more of the same special technical features. This is not found persuasive because there is no error with the lack of unity requirement. The examiner found that the different shapes claimed separated the special technical features of the two main species. Also, the different compositions claimed for the film separated the special technical features of the sub-grouping species.

The requirement is still deemed proper and is therefore made FINAL.

Claims 3, 5 and 6 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected specie, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on April 7, 2010.

Related dimensional information:

20 micrometers = 0.02 millimeters = 0.0007874 inches.

999 micrometers = 0.999 millimeters = 0.03933 inches.

1/25 inches = 0.04 inches = 1.016 mm = 1016 micrometers.

A circle having a 20 micrometer diameter has a 10 micrometer radius and an area of 314 micrometers squared.

A circle having a 999 micrometer diameter has a 499 micrometer radius and an area of 783431 micrometers squared.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Kroyer (2618258).

Kroyer discloses a cooking utensil for non-stick applications having inner walls, the bottom wall's inner surface has a non-smooth surface with convex units (rounded tops 4), the height of the units ranges from 20 micrometers to 999 micrometers (see col. 3, lines 13-15 which state "with depressions having a depth of approximately 1/25 inch or less and a diameter of about 1/8 – 3/8 inch."). Also, Fig. 7 denotes a rippled upper surface that is believed to have convex units within the range. The 1/25 inch dimension equals 1016 micrometers. Although 1016 micrometers is outside the range, the depth of the depressions is "1/25 inch or less." The depth of the depressions is equivalent to the height of the convex units.

The shape of the convex units is best show in Fig. 8, this shape appears to be shaped like a spherical crown because the "like a spherical crown" limitation would allow deviation from a perfect hemisphere. Applicant could have stated "hemisphere or hemispherical" but chose the current language.

When evaluating the bottom circle diameter of the spherical crown, it should be noted that this is a dimensional limitation rather than a limitation that specifies the shape. A hemisphere has a height exactly ½ of the diameter of the circle defining the hemisphere's

bottom. Calculating bottom circle diameter with the 1/25 inch dimension would yield a diameter of 2/25 inch or 2032 micrometers. Although 2032 micrometers is outside the range, the depth of the depressions is "1/25 inch or less" and the corresponding bottom circle diameter is 2/25 inch or less. The bottom circle diameter is within the range of 20 to 999 micrometers. The 20 to 999 micrometer range stated for the bottom circle diameter is 50% of what would be expected for a hemispherical shape.

A circle having a 20 micrometer diameter has a 10 micrometer radius and an area of 314 micrometers squared. Projection area of the convex units directly corresponds to bottom circle diameter. The projection area is within the range of 314 to 783431 micrometers squared. The 314 to 783431 micrometer squared range stated for the projection area is 50% of what would be expected for a hemispherical shape.

Distribution density seems to be controlled by the pattern of protrusions and depressions and the relative spacing of each. The distribution of protrusions versus depressions appears to be 50% to 50%. Fifty percent protrusion density is within the 10% - 60% range stated in claim 1.

Kroyer discloses a surface film (enamel coating 6) formed on the upper surface of the convex units as shown in Fig. 5.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kroyer (2618258) in view of Grycan et al. (5921173) (Grycan) and McFadden (3473952).

If is should be deemed that the shape of the tops (convex units) of Kroyer are not similar enough to a hemispherical shape such that they are not deemed shaped like a spherical crown, then the teachings of Grycan and McFadden are applied. Grycan teaches depressions (recessed portions 142) and convex units (protrusions 138). The depressions of Grycan are defined by a planar surface. The bottom end of each convex unit of Grycan is clearly designated where the convex unit meets this planar surface. The convex units of Grycan are spaced and the shape of the bottom end of each convex unit is clearly defined. The bottom end is either a circle or an oblong ellipse. McFadden teaches a polymer release coating having two layers, a first layer contains a suspensoid of spherical glass beads 14 and bonding material 16. The spherical glass beads define a shape of the first layer of coating such that the tops are spherical or hemispherical as shown in Fig. 1. It would have been obvious to modify the shape of the convex units to be hemispherical to define a shape that can space food away from a majority of a cooking surface by arranging for only top convex surfaces to contact the food. This is desirable for two reasons: (1) to allow even cooking with less than a majority of the adjacent food surface in contact with the cooking utensil and (2) reduce the adhesion of food to a cooking surface because less area is in contact with the cooking utensil which results in less scorching of food.

If it should be deemed that the dimensions are not adequately shown, McFadden teaches glass bead size of 25 to 75 microns (0.025 to 0.075 mm). It would have been obvious to modify the size of convex units to be on the order of 25 - 75 micrometers as such is taught as an optimal size for curvature of a convex unit in a cooking utensil (see column 1, line 29). As shown in Fig. 4 of McFadden, the spacing of the glass shows a density of approximately 10% - 35%. It would

have been obvious to lower the distribution density to reduce the area of contact which would reduce scorching and food adhesion.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kroyer in view of Grycan and McFadden as applied to claim 1 above, and further in view of Culbertson et al. (6613430) (Culbertson).

Kroyer and the combination fail to disclose a film that is oxidized. Culbertson teaches a release coated polymer film that includes an oxidized homopolymer of ethylene (see claim 35). It would have been obvious to modify the film to be an oxidized film to create a film that is less toxic, i.e., less toxic to human body and less toxic to environment.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Stephen J. Castellano/ whose telephone number is 571-272-4535. The examiner can normally be reached on increased flexibility plan (IFP).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony D. Stashick can be reached on 571-272-4561. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Stephen J. Castellano/
Primary Examiner
Art Unit 3781

sjc